VEHICLE EMISSIONS AND FUEL STANDARDS

Australian Automobile Association

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Table of contents

Executive summary

The AAA welcomes the opportunity to comment on the Government's regulation impact statement for Euro 6 emission regulations and a CO2 standard for new cars, as well as the discussion paper on fuel quality standards.

The AAA believes modelling presented for Euro 6 and a CO2 standard has not fully accounted for several critical matters, including:

- The car manufacturers' product plan timelines for the Australian market;
- The refining industry's ability to deliver sufficient supply of appropriate fuels;
- The gap between real-world emission and fuel efficiency levels and laboratory results;
- The benefits of Euro 6 across different sectors of the community, including regional Australia;
- The design of a CO2 standard;
- A full package of measures to support a CO2 standard; and
- Utility costs, or loss of private benefits, associated with a CO2 standard.

The AAA believes the Government must update both regulation impact statements addressing these matters and release them for public comment before a final decision is made.

In addition, the AAA is concerned the Government has undertaken modelling for stricter noxious emission standards and a CO2 standard without considering their impact on each other. Just as concerning, is the fact that both pieces of modelling assume no change to fuel standards, even though fuel standards are currently being reviewed - with significant changes recommended - as part of the same Ministerial Forum's work. This approach makes it impossible to consider the flow-on implications for each regulatory proposal and how they will affect petrol prices and vehicle prices and choice in the market.

Therefore, the AAA strongly believes the Government needs to present a proposed package of all regulatory measures (new fuel quality standards, Euro 6 and CO2 regulations), with a single cost-benefit calculation for the package. Only this will ensure all costs and benefits of the Government's preferred approach are accounted for.

As the peak body representing Australia's motoring clubs and their eight million members, the AAA recognises motorists have a role to play in improving Australia's environmental performance. However, the AAA is strongly committed to ensuring any regulatory measure is properly considered and introduced in a way that minimises cost to motorists and maintains choice. Therefore, the AAA is very focused on understanding how the proposed regulatory changes and associated timeframes for implementation will affect:

- Fuel choice;
- Fuel price;
- Vehicle choice; and
- Vehicle price.

The AAA strongly opposes removing regular unleaded petrol from the Australian market, as proposed in one option under active consideration by the Government, due to its impact on petrol prices. Such a move would add more than $13 to the cost of filling the fuel tank, of the petrol version, of Australia's most popular vehicle. Our analysis shows the removal of 91RON would force the average household to pay up to $423 more each year for petrol. Therefore, the AAA calls on the Government to rule this option out immediately.

It is also critical that new fuel standards are introduced only when there is adequate availability of appropriate fuels to meet demand, thus avoiding fuel price or supply shocks to Australian motorists and industry.

The AAA believes any CO2 standard must maximise vehicle choice in the Australian market. Aggressive targets are likely to have a significant impact in what consumers can buy and what features they have. The AAA is concerned the Government has not accounted for lost vehicle attributes (such as size, power, range) into the overall cost benefit analysis for a CO2 standard.

The AAA also believes estimated fuel savings from a CO2 standard should reflect real-world testing results rather than just laboratory results. One Government proposal under consideration could increase the cost of passenger cars by $1,921 in 2025 and over $3,000 for light commercial vehicles. It is important consumers are not misled about how long it will take to offset this increase in costs through fuel savings.

The AAA is committed to working with the Government to ensure new regulations are implemented on an appropriate timeline and do not add to the cost of transport.

Introduction

The AAA is the peak organisation for Australia's motoring clubs and their eight million members. The AAA advances the interests of its constituent motoring clubs as well as all road users across Australia to ensure transport is safe, sustainable, and fair.

The AAA welcomes the opportunity to comment on the Government's regulation impact statements for Euro 6 emission regulations and a CO2 standard for new cars, as well as the discussion paper on fuel quality standards. Given all issues are interrelated, the AAA's response to both regulation impact statements and the discussion paper are contained in this one document.

One of the key challenges for Australia and the rest of the world is to harness the enormous benefits of transport, while also minimising the environmental impact of travel. The AAA recognises that motorists must play a role in improving our national environmental performance.

While the AAA supports measures to reduce the environmental impact of motoring, the AAA is also committed to ensuring any regulatory proposal is carefully considered and introduced in a way that does not penalise motorists. The AAA Transport Affordability Index shows that over thirteen per cent of average household incomes are consumed by transport costs. This is compared to electricity and gas, which consume between one and three per cent of average household income[1]. The AAA Transport Affordability Index serves as a reminder that transport is a significant cost for families.

Therefore, the AAA is very focused on understanding how the Government's proposed regulatory changes and associated timeframes for implementation will affect:

- Fuel choice;
- Fuel price;
- Vehicle choice; and
- Vehicle price.

Removal of regular unleaded petrol from the market, proposed in one option by the Government, would limit fuel choice and raise costs for motorists, including owners of existing vehicles. The AAA opposes removing regular unleaded petrol from the market. In fact, given our analysis shows this option would force the average household to pay up to $423 more for petrol each year, the AAA calls on the Government to rule this option out immediately. It is also critical that new fuel standards are introduced only when there is adequate availability of appropriate fuels to meet demand, thus avoiding fuel price shocks to Australian consumers.

The AAA believes any CO2 standard must maximise vehicle choice in the Australian market. The introduction of an aggressive CO2 standard could result in a market distortion which reduces vehicle weight; reduces vehicle power; changes the fleet mix and the proportion of large/small cars; or any combination of all of the above.

The AAA also believes the Government should use results from real-world driving tests – rather than just laboratory tests – to calculate the amount of fuel savings consumers can expect to achieve as a result of a CO2 standard to offset the increased cost of new cars - which could increase by $1,921 in 2025 for passenger cars and over $3,000 for light commercial vehicles under one Government proposed scenario.

To achieve an orderly transition to cleaner cars and cleaner fuels that does not result in the consumer being unduly burdened with additional costs, the AAA believes modelling for new emissions standards and fuel quality standards must occur simultaneously. Emissions standards and fuel quality are interrelated and without modelling all measures together, consumers could pay significantly more for fuel and more for cars while delivering little environmental benefit.

The AAA is therefore deeply concerned the Government has undertaken modelling for stricter noxious emission standards and a CO2 standard without considering their impact on each other, and in both cases assuming no change to fuel standards. It is impossible to consider the flow-on implications for each regulatory proposal and how they will affect petrol prices and vehicle prices and choice in the market.

In addition to concerns about the modelling process, the AAA has identified several critical matters that are either omitted or not thoroughly analysed in the Government's regulation impact statements for Euro 6 and a CO2 standard. These include:

- The car manufacturers' Australian product plan timelines. The AAA understands that manufacturers determine their product plans for specific markets around five years in advance. The AAA is concerned that additional compliance costs could be passed on to consumers if new regulations are introduced outside of a product cycle.

- The refining industry's ability to deliver sufficient supply of appropriate fuels. The AAA understands from the automotive industry that Euro 6 compliant vehicles require low sulfur petrol. The Australian Institute of Petroleum (AIP) has stated the local industry could produce a fuel specification of 10 ppm sulfur across all grades of petrol by 1 July 2027. However, the Government has proposed an implementation start date for Euro 6 of 2019.

- Detailed analysis of the gap between real-world emission levels and laboratory results. Early results from the AAA real-driving emissions testing program shows some vehicles use up to 35 per cent more fuel in the real-world than in the laboratory and emissions of noxious gasses are up to four times the regulatory limits. These results are consistent with international research.

- Benefits of Euro 6 for regional communities. Air quality benefits associated with Euro 6 will be realised by residents of Australia's most densely populated cities, however any corresponding increase in fuel costs will also fall upon those who drive the furthest distances throughout regional Australia.

- The detailed design of a CO2 standard. The Government is seeking comment on three proposed CO2 targets without detailing how any of those targets could be measured. Targets are based on the composition of the entire vehicle fleet and normally include credits for selling electric vehicles, as well as banking, trading and pooling arrangements. All these issues affect the composition of a CO2 standard and the ability of manufacturers to meet a target.

- A detailed analysis of utility costs associated with a CO2 standard. A CO2 standard can reduce vehicle choice and remove vehicle features valued by consumers, like performance, towing capacity and number of passenger seats. Any loss of valued features as a result of a CO2 standard must be fully accounted for. The Government has undertaken sensitivity analysis, but has not released modelling underpinning the analysis.

- A full package of measures to support a CO2 standard. Experience in other markets indicates that CO2 standards for new vehicles have been supported by a range of complementary measures. For Australia, this may include incentives for purchasing low emission vehicles and the provision of information to consumers portraying real-world fuel consumption and noxious emissions.

The AAA strongly believes the Government must address these issues by way of updating the regulation impact statements for CO2 and Euro 6 and releasing them for consultation when the Government releases the regulation impact statement for fuel quality standards.

Furthermore, the AAA believes the Government should conduct a combined cost-benefit analysis for its preferred approach to Euro 6, CO2 and fuel quality standards as a whole package. This will ensure all costs and benefits of the Government's preferred approach to these issues are all accounted for.

Section Two

Better fuels for cleaner air – discussion paper

Overview

The AAA supports changing Australia's fuel quality standards to reduce air pollution and ensure appropriate fuels are available to support new engine technologies into the future. In fact, without the availability of appropriate fuel specifications, the Government is unlikely to achieve its desired health benefits from noxious emission standards and CO2 emission reduction targets from the light vehicle fleet. However, the AAA believes the timeline for the introduction of new fuel quality standards must be based on when there will be adequate availability of appropriate fuels to meet demand, thus avoiding price shocks to the Australian fuel market.

Resolving fuel quality standards first

The AAA believes any changes to fuel quality standards and their timing underpins the Government's ability to introduce Euro 6 and a CO2 standard for new cars. This is because implementation timelines for CO2 and particularly Euro 6 standards are to a large extent dependent on what fuel is available in the Australian market and when. It is difficult to form a view on timelines for introducing these emission standards without the Government first signalling its intention regarding fuel quality standards.

AAA Position

The AAA believes it is critical that consideration of new fuel quality standards is completed before a final decision is taken on Euro 6 and a CO2 standard.

Keeping 91 RON

The AAA does not support Option B in the Government's discussion paper, as it would ban the sale of regular unleaded petrol (91 RON) in the market. 91 RON is Australia's most popular fuel choice, accounting for 69 per cent of petrol sales in 2015-16[2]. This is principally because it is the least expensive grade of petrol available, retailing at between 11 to 16 cents per litre cheaper than premium unleaded petrol (95 RON)[3].

According to the AAA's December 2016 Transport Affordability Index, a family with two cars spends around $3,200 per year filling up both cars with 91 RON. If the family were forced to use 95 RON, their annual fuel bill could increase by $341, assuming an average price differential of 13.2 cents. However, in Sydney, 95 RON can be 16.4 cents higher than 91 RON, resulting in a much higher fuel bill increase of $423[4].

The AAA calls on the Government to immediately rule out removing 91 RON from the market.

If new fuel efficient cars entering the market as a result of a CO2 standard must use 95 RON to achieve maximum performance, then this should be achieved through consumer education and/or manufacturer's specifications, not by removing all fuels below 95 RON from the market. It would not be reasonable to remove the less expensive 91 RON fuel for owners of existing vehicles who may not receive any benefit.

AAA Position

The AAA does not support the removal of regular unleaded petrol (91 RON) from the market and calls on the Government to immediately rule it out. Removing it will force consumers to buy more expensive fuel, irrespective of the car they drive.

New standards based on rigorous testing

The AAA is supportive of reducing the sulfur limit for 91 RON overtime as part of the new fuel quality standards framework. However, the AAA strongly believes it is critical to understand the full costs and benefits of low sulfur petrol on the existing fleet. The Federal Chamber of Automotive Industries (FCAI) has stated that Euro 6 compliant vehicles require a sulfur limit of 10 ppm in fuel. However, there is little understanding as to whether low sulfur petrol in older cars will deliver any health benifits. To gain a better understanding, the AAA is calling for the Government to support a test program to assess petrol sulfur sensitivity for existing cars in the Australian fleet.

The aim of the testing program would be to develop data that will assist in estimating what health benefits could be achieved from the existing light vehicle fleet with a change to the petrol standard to reduce sulfur. The AAA recommends that existing petrol vehicles in the Australian vehicle fleet that comply with current Euro 5 requirements be tested, to determine what benefits, if any, would result from reducing sulfur levels in 91 RON fuel.

A testing program is critical to understanding the full cost and benefits of moving to a low sulfur petrol standard. Revised specifications for fuels, and timeframes for availability, will influence the cost of such fuels. However, the benefits also need to be considered, and empirical data will be required to provide a basis for consideration of this issue.

AAA Position

The AAA believes the Government should support a test program to assess petrol sulfur sensitivity for existing cars in the Australian fleet. This will be a crucial input to the cost-benefit analysis.

Managing an orderly transition

The AAA supports an orderly transition to new fuel quality standards in Australia that minimises cost to consumers and ensures supply security. An orderly transition would involve new standards being introduced on a timeline that does not result in a fuel price shock to consumers due to a lack of fuel supply, or require financial incentives to the petrol industry, which would ultimately be passed onto consumers.

The timing of new fuel quality standards must be based on when there will be sufficient supply of new fuel grades in the Australian market. If local oil refineries are unable to upgrade their facilities in time to meet new standards, and there is not enough supply of appropriate fuels in the Asia-Pacific region, demand will outstrip supply and lead to a fuel price shock and fuel security risks.

The AAA understands the AIP, which comprises Australia's four remaining oil refiners – Viva Energy, ExxonMobil, Caltex, and BP – has stated that Australian oil refineries could produce a fuel specification of 10 ppm sulfur across all grades of petrol by 1 July 2027. The 2027 timeline would ensure: The best chance of maintaining fuel refining capacity in Australia; minimal price impacts on consumers; and maximum security of fuel supply.

Based on the current information provided by the AIP, the AAA believes a 2027 timeline for introduction of a fuel quality standard mandating 10 ppm sulfur limits across all petrol grades is appropriate. The AAA believes the Government should undertake a cost-benefit analysis on the proposal put forward by the AIP, in addition to the five other options under consideration.

The AAA also understands the AIP has stated to the Government that it would need to offer financial incentives if new standards mandating petrol with 10 ppm sulfur limits were introduced prior to 2027. The AAA does not support any financial incentives that are passed onto consumers as costs.

While a 2027 timeline would limit any petrol price shocks, the AAA is open to considering a staged implementation of new fuel quality standards in the period between 2020 and 2027, if shown to be cost effective for consumers. Such a staged implementation approach may limit petrol price shock for consumers, while ensuring there is an appropriate fuel specification to support new engine technologies. Any such proposal must include a cost benefit analysis.

AAA Position

The AAA supports a transition to new fuel quality standards that does not result in a petrol price shock and does not result in financial incentives for the fuel industry being passed onto consumers.

Conclusion

The AAA supports the introduction of new fuel quality standards, provided that:

- 91RON petrol continues to be available in the Australian market;
- They are introduced only when there is adequate availability of appropriate fuel;
- The benefits for the existing fleet are determined; and
- Financial incentives designed to bring forward the timing of new fuel specifications are not passed directly on to motorists.

The AAA looks forward to the Government releasing a regulation impact statement on changes to fuel quality for consultation.

Section Three

Vehicle emissions standards for cleaner air - draft regulation impact statement

Overview

The AAA does not consider that the draft regulation impact statement for vehicle emissions standards for cleaner air makes a robust case for mandating Euro 6 for light vehicles. However, the AAA and member clubs acknowledge that cars are a source of toxic air pollution and the need to ensure the light vehicle fleet reduces its impact on air quality.

The AAA also notes that, regardless of whether Euro 6 is mandated in Australia, it is likely Euro 6 compliant vehicles will be supplied to the Australian market, and that precluding these vehicles would deprive Australia of vehicles with the latest emissions and safety technologies. Appropriate fuels will be required to avoid operability issues with the engines in these vehicles.

Of serious concern, however, is the timeline in which the Government has proposed to introduce this regulation. Discussions with the FCAI and the AIP, suggest the Government's proposed 2019 start date will impact on the manufacturers' product plans for the Australian market and will not align with a timeframe that ensures appropriate fuel is widely available in the Australian market. The AAA is concerned the proposed timeline could result in new cars becoming less affordable and petrol becoming more expensive.

Rather than pursuing the proposed 2019 timeline for introduction of Euro 6, the AAA recommends the Government consider a staged approach between 2023 and 2027. This would allow for some health benefits to be realised until appropriate fuel for use in Euro 6d compliant petrol engines is widely available in the Australian market.

Timeline for introduction of Euro 6

The AAA believes the introduction of Euro 6 regulations should align with the manufacturers' product plan timelines for the Australian market. The FCAI stated in their submission to the Government's discussion paper on vehicle emissions that manufacturers require five years to make significant change to their product plans. Based on this information, the earliest time manufacturers could ensure all models are Euro 6 compliant would be 2023, presuming regulations pass the Parliament in 2018.

The AAA is concerned the current 2019 timeline does not provide manufacturers with sufficient lead time to incorporate new regulations into their product plans for the Australian market, which could result in additional regulatory costs that are passed on to consumers.

In addition to product plan timelines, there is also the issue of fuel availability. The FCAI has stated very clearly that Euro 6 compliant vehicles require ultra-low sulfur levels in fuels, principally limited to 10 ppm. While current Australian fuel standards stipulate that diesel fuels in Australia must have a limit of 10 ppm sulfur, petrol can have up to 50 ppm sulfur in 95 RON and up to 150 ppm sulfur in 91 RON. While the AAA understands that petrol in the market records a much lower sulfur content than the regulatory limit, the fact is that petrol with 10 ppm sulfur is not widely available in Australia.

Based on the Government's proposed timelines, the Government would need to limit sulfur in petrol to 10 ppm in 2019. However, as stated earlier, such a timeline for the introduction of new fuel quality standards exposes Australia to fuel security risks and will very likely result in a fuel price shock.

The Government's 2019 timeline thus presents serious implications for consumers, manufacturers and oil refineries, as it would very likely result in higher regulatory costs and higher fuel costs.

AAA Position

The AAA supports the introduction of Euro 6 based on a timeline that aligns with car manufacturers' product plan timelines for the Australian market and the refining industry's ability to supply appropriate fuels without causing a petrol price shock or cause fuel security risks.

Alternative options for the Government to consider

Given the 2019 timeline analysed by the Government would likely result in additional compliance costs and risk a petrol price shock and fuel supply issues, the AAA believes the Government should consider a staged implementation for Euro 6.

There are different levels of stringency in the Euro 6 regulation - expressed as Euro 6a, Euro 6b, Euro 6c, and Euro 6d. The Government has proposed to introduce Euro 6d in the regulation impact statement, skipping a, b and c. The European Union introduced Euro 6 regulation in stages. The Government may consider it appropriate to implement a staged approach in Australia.

A staged approach could provide an opportunity for the Government to realise some health benefits while appropriate petrol becomes widely available. It should be noted that current sulfur levels in Australian diesel fuel would support Euro 6 diesel engines.

AAA Position

The AAA believes the Government should consider a staged approach to introducing Euro 6 regulation in Australia, in order to deliver some health benefits until appropriate fuel is widely available.

Quantifying air quality problems

The AAA has long called for the Government to quantify the light vehicle fleet's contribution to Australia's air quality problems relative to other factors such as industrial activity, dust storms, agricultural activities, wood smoke emissions, salt spray and hazard reduction burns. This is to ensure any regulatory response is appropriate to the contribution from each source.

The draft regulation impact statement states that motor vehicles contribute 60-70 per cent of NOx emissions and up to 40 per cent of HC emissions and refers to a previous regulation impact statement on Euro 5/6 Light Vehicle Emissions Standards. However, these figures do not have traceability to a scientific reference in either of these documents.

The draft regulation impact statement also states that up to 30 per cent of the overall particulate load in urban air sheds is attributable to motor vehicles, particularly diesel vehicles. However, this figure is from a 2012 report in the United Kingdom where the penetration and concentration of light diesel vehicles can be expected to be much higher than Australia and the atmospheric conditions may differ.

The remaining information in the impact statement regarding the contribution of light vehicles to Australia's air quality problems is based predominantly on the size and composition of the light vehicle fleet, but does not quantify the contribution to air quality problems.

AAA Position

The AAA believes the Government should substantiate the light vehicle fleet's current contribution to Australia's air pollution.

Assumptions for sulfur limit in Australian petrol

The regulation impact statement makes some allowances for deterioration in vehicle emission control systems, to account for higher sulfur limits in Australian petrol (as the cost benefit analysis assumes no changes to Australian fuel quality standards). However, it appears the Government has not accounted for consumer detriment that could arise as a result of using high sulfur petrol in Euro 6 compliant vehicles. The automotive industry has been clear in stating that Euro 6 compliant vehicles must use petrol with less than 10 ppm sulfur. Assuming this to be the case, if consumers run their new vehicles on high sulfur fuels, operability problems could arise and vehicles could go into 'limp mode' and must be taken to a repairer. This will cost consumers in time and additional repair costs.

AAA Position

The AAA believes the regulation impact statement must factor in the costs consumers may experience as a result of using high sulfur petrol in Euro 6 compliant vehicles, not just reduced health benefits.

Adoption of UN regulation

The AAA supports the Australian Government's policy of adopting UN vehicle regulations where possible. Adopting UN regulations reduces red tape and keeps compliance costs as low as possible, minimising cost of new cars. Given Australia will soon import 100 per cent of all new vehicles, it is crucial Australian Design Rules reflect international regulation.

The AAA believes the most efficient way to introduce Euro 6 noxious emissions standards would be to apply the relevant UN Regulation. The draft regulation impact statement proposed the adoption of Euro 6d from 2019, however the UN has not yet developed this regulation and the timeframe for the UN development of this regulation is unclear.

The Australian Government timelines for the introduction of Euro 6d will need to align with the availability of a suitable UN Regulation. If the Government intends to introduce Euro 6d ahead of the availability of the relevant UN Regulation, it would need to adopt the standard of the European Union or develop a separate unique standard, both of which have additional potential risks and costs.

AAA Position

The AAA strongly believes that Australia's noxious emissions standards should be based on UN Regulations. Developing a unique Australian standard or adopting the European Union standard would potentially add compliance costs to new cars.

Real-world emissions testing

The AAA strongly believes in the need to achieve greater transparency around vehicle compliance with emission standards. Currently, manufacturers are required to comply with emission limits during a laboratory based test only. The test is not a good representation of how vehicles are actually driven. As a result, technologies and strategies to reduce emissions in the laboratory do not always deliver the same level of benefit on the road.

In the wake of the Volkswagen emissions scandal, the AAA commissioned a study of 30 vehicles to clarify how real-world emissions and fuel efficiency differ from those observed in a laboratory setting. Results from the first ten cars tested show emissions of noxious gases are up to four times the regulatory limits. These preliminary results cast doubt over the relevance of laboratory testing and suggest consumers are not being provided with reliable information.

The AAA testing results are similar to other findings overseas. For instance, a 2014 study undertaken by the International Council on Clean Transportation into the real-world emission levels of diesel cars found "The average, on-road emission levels of NOX were estimated at 7 times the certified emission limit for Euro 6 vehicles[5]."

The AAA believes it is critical that real-world independent testing is introduced as part of the compliance regime to ensure consumers aren't asked to pay more for regulation that only delivers a health benefit in a laboratory. The AAA understands that compliance with Euro 6d will require an on-road test, in addition to the laboratory test. While the AAA strongly supports this move, as it should reduce the difference between real-world and laboratory results, it will not change the fact that compliance testing will still occur overseas and in some cases by the manufacturer. Should the Government implement more stringent emission standards, the AAA believes it should also ensure compliance with those new standards.

A local testing regime must address two important matters: To ensure manufacturers are complying with Australian regulation limits, and to provide consumers with more information about the actual emission levels of new cars. Currently, the Australian Government's Green Vehicle Guide stipulates the emission regulation with which a car complies. However, it does not show its actual emission levels. Consumers should be able to compare actual emission levels of different vehicles - not just what regulation they comply with. This information would be much more useful to consumers if based on real-world testing.

AAA Position

The AAA considers it critical that local real-world independent testing is introduced in Australia to ensure consumers are not misled as to the actual emission levels and therefore health benefits being achieved.

Conclusion

The AAA supports the introduction of Euro 6 provided that:

- It is introduced on a timeline that aligns with car manufacturers' Australian product plans and when appropriate fuels are widely available in the Australian market;
- There is consideration of different phase-in periods;
- Only UN regulations for Euro 6 are adopted; and
- Local real-world independent testing is introduced to ensure compliance with new standards.

Section Four

Improving the efficiency of new light vehicles – Draft regulation impact statement

Overview

The AAA is committed to reducing the environmental impact of motoring and supports a CO2 standard for light vehicles which is appropriate for Australian conditions and maintains choice and affordability in the market.

The Government's draft regulation impact statement for a CO2 standard outlines three proposed targets for consideration, however it does not show how it plans to achieve any of them. A CO2 standard is not as simple as placing a CO2 limit on each car; it is a complex interrelated web of activities. To properly review a proposed CO2 target, the AAA believes all interrelated activities must be included for consideration. One target might be more appropriate than another depending on how the regulatory regime is designed. As a result, the AAA is not in a position to support one target over another until all design features are proposed.

Given there are many complexities yet to be fully considered, the AAA strongly believes the Government must release an updated regulation impact statement for a CO2 standard for consultation in mid-2017. This will give industry an opportunity to consider the proposed CO2 standard as a whole.

AAA support for cleaner vehicles

The AAA welcomed the Government's commitment to reduce Australia's CO2 emissions by 26-28 per cent on 2005 levels by 2030 as part of the Paris Agreement. With the Australian light vehicle fleet contributing around ten per cent of the Australia's CO2 emissions, the AAA is committed to working with the Government to ensure the light vehicle fleet makes a valuable contribution to Australia's 2030 target.

AAA Position

The AAA is committed to working with the Government to ensure the light vehicle fleet makes a valuable contribution to Australia's 2030 Paris Agreement target.

A CO2 standard to maximise vehicle choice

The AAA believes international CO2 standards provide a foundation for the development of a CO2 standard for the Australian light vehicle fleet. However, the AAA does not support the adoption of a specific target that has been set in another jurisdiction, as these targets are based on the fleet characteristics and travel behaviour of that jurisdiction.

A CO2 target for light vehicles is measured across the whole fleet. There is no CO2 target for an individual car. In the European Union, each manufacturer is required to meet a specified sales-weighted CO2 limit based on the average mass of new cars sold, with different targets for passenger cars (including SUVs) and light commercial vehicles. In the United States, the fuel consumption requirement is based on the average footprint, and has separate requirements for passenger cars and light trucks (including SUVs). In both cases, the CO2 target is designed around the composition of their whole vehicle fleet and is not applicable to another fleet's composition.

If Australia adopts a target from another jurisdiction, particularly the European CO2 target, it will be adopting a standard that is applicable to a fleet that is different to Australia's. This will likely result in reduced vehicle choice.

Australia's vehicle fleet composition reflects our geography, lifestyle, and road safety profile. Australians like driving larger cars, highlighted in the fact that the Toyota Hilux was Australia's most popular-selling new vehicle in 2016. SUVs and light commercials today make up 57 per cent of Australian new car sales (up from 41 per cent in 2011). To maximise vehicle choice, the Government must base an Australian CO2 target on the composition of Australia's fleet.

There is also a view that Australia needs to 'catch up' to Europe's average fleet wide CO2 levels. Average levels of CO2 emitted from Europe's fleet are different to Australia's for several reasons other than Australia not having a specified target. Europe has several measures that impact on the composition of its vehicle fleet, including: higher fuel taxes (encouraging purchase of more fuel efficient and smaller vehicles); lower diesel taxes (encourages purchase of diesel vehicles to reduce running costs); vehicle excise duties (designed to encourage purchase of low CO2 emitting cars); and direct cash rebates for purchase of low CO2 emitting cars[6]. Similarly, many jurisdictions in the United States have employed measures to encourage the uptake of electric and low CO2 emitting cars. Australia does not have such arrangements.

We can learn much from overseas about the design of CO2 standards, and adopt best features from each. However, an Australian CO2 target must be designed for the Australian light vehicle fleet.

AAA Position

An Australian CO2 target must be unique to Australia's light vehicle fleet in order to encourage uptake of low CO2 emitting cars whilst maximising vehicle choice and maintaining affordability.

Comment on proposed CO2 targets

The AAA believes there are several omissions in the regulation impact statement that limit our ability to fully analyse the three proposed targets. These include:

- A detailed understanding of what level of abatement the Government expects to achieve from the light vehicle fleet in order to meet its Paris Agreement target;
- Product plan timeframes of manufacturers;
- Preferred design features of a CO2 standard;
- Incentives;
- Non-financial/utility costs; and
- Detailed consideration of fuel savings in real driving conditions.

a. Obligations under the Paris Agreement

The Government has committed to reducing CO2 emissions by 26-28 per cent below 2005 levels by 2030. However, the Government has not said what each sector is expected to contribute. Currently, the only indication of a sector by sector breakdown is in a graph produced by the Department of Environment and re-published in the Vehicle Emissions Discussion Paper released in 2016. However, the underlying assumptions for the light vehicle sector in this graph are based on Australian fuel efficiency against current US and EU CO2 standards[7]. As discussed previously, fuel efficiency standards in those regions are based on the vehicle fleet composition in that particular region.

Without an understanding of what level of abatement each sector needs to achieve in order for the Government to meet the Paris Agreement targets, it is impossible to assess the most cost effective measures to meet that target.

AAA Position

The AAA believes the Government needs to provide more information on what abatement levels it expects to achieve from the light vehicle fleet to meet its Paris Agreement targets in order to undertake a thorough assessment of particular CO2 target.

b. Proposed timeframes versus market realities

The AAA believes any proposed timeline for the introduction of a CO2 standard should reflect the vehicle manufacturers' product plan timelines for the Australian market. This is to give manufacturers sufficient time to incorporate new regulations into their product planning, thus minimising additional regulatory costs that are inevitably passed on to consumers or result in reduced vehicle choice.

The Government has proposed to implement a CO2 standard from 2020. However, as the FCAI has stated, car manufacturers determine their product plans five years in advance for certain markets. Based on this, and presuming regulations are in place by 2018, the earliest time manufacturers could comply with a strict CO2 standard in Australia without attracting additional compliance costs would be 2023. The AAA also understands that light commercial vehicles can have longer model cycle times than passenger vehicles. A CO2 standard starting in 2020 could therefore result in additional compliance costs and limit vehicle choice.

It is worth noting that in both the United States and the European Union, car manufacturers have been provided more time to comply with their respective 2025 and 2021 targets than what the Australian Government has proposed to date. In the case of the US, regulation for the 2025 target passed into formal regulation in 2012, giving manufacturers fourteen years notice to reduce emissions by an estimated 43 per cent[8]. In the EU, 2021 targets were foreshadowed in legislation in 2009, giving manufacturers twelve years notice to reduce emissions by an estimated 35 per cent[9]. In Australia, presuming regulation is passed in 2018, the Government is giving manufacturers just seven years notice to reduce emissions by between 23 and 40 per cent.

The AAA also questions the necessity of a 2025 target. A 2030 target, with a midterm review if necessary, would enable a longer lead in time and provide long term stability for car manufacturers, ensuring vehicle choice and affordability are not compromised, while still reducing CO2 emissions and helping the Government meet its 2030 Paris Agreement targets.

AAA Position

The AAA believes any proposed timeline for the introduction of a CO2 standard should align with the manufacturers' product plan timelines for the Australian market.

c. Preferred design features of a CO2 standard

Limit value curves

A CO2 standard for a light vehicle fleet requires each manufacturer to comply with a limit value curve based on a sales-weighted average of their vehicle fleet. The limit curve permits larger vehicles to emit more CO2 than smaller vehicles. It does not require each individual vehicle to comply with the curve, only the manufacturers' sales-weighted average. This allows manufacturers to sell individual vehicles with emissions above the limit curve, provided these are balanced by sales of vehicles below the curve such that the sales-weighted average meets the curve. In Europe, the limit curve is set according to vehicle mass, whereas the US specify CO2 limits on the footprint of the vehicle.

Limit curves can be set for the entire light vehicle fleet, or a separate curve for passenger and light commercial vehicles. There is also a question of whether SUVs are considered as a passenger vehicle or a light commercial vehicle for the purpose of a CO2 standard.

Analysis by ABMARC, conducted on behalf of the Department of Infrastructure and Regional Development, produced 45 different limit curves that would allow any of the Government's three proposed targets to be achieved. The fact that there are 45 different ways to design a CO2 standard illustrates how much analysis is yet to be completed in this process.

Super- credits, eco-innovation, pooling, banking arrangements and phase-in period

In addition, CO2 standards around the world include specific arrangements like super credits (where manufacturers can count the sale of multiple very-low emission vehicles for each one sold), eco-innovation, pooling arrangements, banking and trading. A CO2 standard also requires a phase in period, either as a percentage of the vehicle fleet, gradually increasing each year until 100 per cent of the fleet is covered, or by staging lower targets year on year.

In addition to the limit curve, other features like credits, pooling, banking, trading and the phase in period all affect the operation of the CO2 standard.

Other considerations

The way in which the laboratory test is conducted has a strong influence on the fuel consumption and CO2 emissions recorded for the vehicle tested. The regulation impact statement does not detail the laboratory test parameters to be used (drive cycle, road load, use of vehicle systems such as air conditioning, etc.). This needs to be clarified before proper consideration can be given to the proposed CO2 targets.

An important consideration in the development of a CO2 standard is how to calculate emission reductions from improvements to air conditioning refrigerant gases. Reduced CO2 from changes to refrigerant gases are not accounted for during a laboratory drive cycle test and are therefore not part of a car's official overall CO2 emission levels. In Europe, refrigerant gases are not credited towards meeting the mandatory CO2 target. However, they are in the US system.

The draft regulation impact statement mentions that any crediting would need to deliver abatement beyond what the Government expects to achieve from existing arrangements for the phase down of hydrofluorocarbon refrigerants. However, it has not ruled a crediting system in or out. The AAA believes this is another matter that must be clarified before a proper assessment of a CO2 target can take place.

AAA Position

The AAA believes the Government must release an updated regulation impact statement for public consultation that takes into account all the design features of a CO2 standard, such as limit value curves, phase-in periods, credits, pooling, banking arrangements and calculation of refrigerant gases.

d. Incentives

If the Government proposes an aggressive CO2 target for the light vehicle fleet, it would need to introduce additional incentives outside of the CO2 standard to encourage demand for more fuel efficient and electric cars.

Analysis by ABMARC, conducted on behalf of the Department of Infrastructure and Regional Development, found that in order to meet target A in the regulation impact statement, electric cars will need to make up at least 9.5 per cent of all light vehicle sales by 2025[10]. According to VFACTS sales data compiled by the FCAI[11], electric vehicles sales (excluding Tesla) totalled 1,135 in 2014, 1,108 in 2015 and 219 in 2016, making up just 0.02 per cent of all light vehicle sales. To meet target A, electric car sales would have to increase from 219 in 2016 to around 112,000 in 2025, presuming overall car sales remain the same. The Government would need to introduce significant financial incentives to achieve this number.

ABMARC analysis shows also that in order to achieve target C in the draft regulation impact statement, electric cars would need to make up around three per cent of all sales. While this is much lower than what is needed to achieve target A, it would still require electric car sales to increase from 219 to around 35,000 per year, assuming annual new car sales continue to reach around 1.2 million in 2025.

AAA Position

The AAA believes that an aggressive CO2 target for the light vehicle fleet will need to be accompanied with additional incentives outside of the CO2 standard to encourage demand for more fuel efficient and electric cars. However, any incentives must be able to demonstrate their effectiveness.

e. Non-financial/utility costs

The AAA believes that the costs associated with a CO2 standard must account for non-financial costs that arise as a result of loss of any private benefits. As a result of a CO2 standard, manufacturers may need to reduce vehicle weight; reduce vehicle power; increase purchase price; change the fleet mix and the proportion of large/small cars; or any combination of all of the above, relative to business as usual, in order to meet the CO2 target. Many of these features are valued by Australian consumers, meaning their loss must be accounted for.

A report by the Centre for International Economics, commissioned by the AAA, stated that:

...if emission standards impose fuel savings on drivers - that is, the standards force drivers to purchase efficient vehicles they would not otherwise buy - then we cannot simply assume the standards create straight (net) benefits. While the standards create fuel savings, they also impose opportunity costs on drivers, such as loss of utility, by forcing them to switch to vehicles with characteristics that are not necessarily preferred[12].

The CIE noted that a US report estimated the value of lost amenities from other vehicle characteristics as a consequence of standards at between US$1,400 and US$2,200 per vehicle.

The CIE also found that the cost per tonne of abatement as a result of a CO2 standard can vary from **minus $357 to plus $437**, depending on assumptions relating to possible private/consumer benefits and technology costs.

The more ambitious the target, the more likely Australians will be forced to purchase cars that do not include many of the features valued by consumers.

While the Government has undertaken some sensitivity analysis with regards to utility costs, it has not released modelling underpinning the analysis.

AAA Position

The AAA believes there needs to be further analysis of the impact of utility costs on all three proposed targets, and the release of detailed information that underpins those assumptions.

f. Fuel savings: real-world versus the laboratory

The AAA strongly believes in the need to achieve greater transparency around vehicle compliance with emission standards and claimed fuel efficiency. The current fuel consumption information provided to consumers is derived in a laboratory test that is not a good representation of how vehicles perform on the road. As a result, technologies and strategies to reduce emissions and fuel consumption in the laboratory do not always provide the same level of benefit on the road.

Given the AAA's strong belief in providing accurate information to consumers and ensuring vehicle compliance, the AAA is currently conducting a real-world emissions testing program. In December 2016, the AAA released results of the first ten vehicles tested in the program. It found that some vehicles use up to 35 per cent more fuel in the real world than the laboratory. On average, fuel consumption for the ten vehicles tested was 20 per cent higher in the real-world.

The results from the AAA testing program are consistent with other analysis around the world on the divergence between laboratory testing and real-world results. The International Council on Clean Transportation (ICCT) has long been monitoring this divergence and has found that as emission regulations are tightened, the greater the divergence has become. Their latest report: *From laboratory to Road* found the gap between real world and official CO2 emissions in the EU is now 40 per cent, stating "less than half of the on-paper CO2 emission reductions in recent years translate into real world reductions." It also states that "the divergence translates into increase fuel costs on the order of (EU) $450 per year[13]."

Furthermore, the US Environment Protection Agency (EPA) publishes a report which estimates real-world CO2 emissions and fuel economy of cars sold in the US each year. The report states that the difference between real-world and lab results on CO2 values is on average 25 per cent and 20 per cent for fuel economy values.

It is worth noting also that the RACQ EcoDrive study, which involved 1,200 participants, showed real-world fuel use was on average 20 per cent above laboratory test figures.

The fuel saving benefits calculated in the Government's draft regulation impact statement are based on laboratory testing only, not real-world testing. It appears the Government has factored in a slight divergence of 5-10 per cent between real world and lab test results in the cost-benefit analysis. However, based on AAA testing, ICCT analysis, US EPA reporting, and other research, this divergence is actually between 20 and 40 per cent.

AAA Position

The AAA believes the Government must produce more detailed sensitivity analysis of expected fuel savings in the real-world.

Measures to accompany a CO2 standard

The AAA believes it is vital for the Government to consider a package of measures when developing a CO2 standard to ensure the largest benefits are achieved across the entire vehicle fleet.

a. Reduce the cost of new cars

Based on the Government's proposed targets, the average cost of new cars is expected to increase between $827 and $1,921 for passenger cars and $752 and $3,120 for light commercials[14]. In addition, the introduction of Euro 6 (which the Government is also considering) is expected to increase the cost of new petrol cars by $160 and light diesel cars by $550 on average[15]. In other words, the Government is actively considering new regulatory measures that could increase the cost of new cars by between $912 and $3,670 on average.

The AAA considers that these estimates are conservative. The estimate essentially depends on whether the cost of developing new vehicle technology to meet standards is additive or not additive i.e. can be factored into business as usual costs or is added to the final vehicle cost. The CIE noted that costs could range from $1,897 in a best-case scenario to $4,863 in a worst-case scenario[16].

Such an increase in the cost of new cars will have an impact on the affordability of new cars, which could result in consumers holding onto their less fuel efficient and importantly, less safe cars for longer. Given this affordability risk, the AAA believes the Government can and must introduce measures that keep the cost of new cars affordable.

Remove tariffs on imported vehicles

The Government can improve affordability and environmental sustainability of motor vehicles by removing the five per cent tariff on imported motor vehicles. This tariff is designed to protect the local vehicle manufacturing industry which will cease to exist in October 2017.

This tariff is expected to add $550 million to the cost of new cars each year[17]. Its removal will place downward pressure on new vehicle prices, encouraging more consumers to purchase newer, cleaner, safer cars, which will contribute to the Government's road safety, air quality and greenhouse objectives.

Removal of luxury car tax

The Government can further reduce the cost of new cars by removing the luxury car tax. The luxury car tax is an inefficient tax which targets vehicles that are often the leaders in providing safety and environmental benefits.

Removing the luxury car tax will contribute to downward pressure on new vehicle prices, and allow more high technology vehicles to enter the Australian vehicle fleet. This would contribute to the Government's road safety, air quality and greenhouse objectives.

Importation laws

The AAA supports the Australian Government's announced changes to the Motor Vehicle Standards Act to allow consumers to personally import a new vehicle from another country with comparable standards to Australia, up to once every two years.

The AAA believes the proposed changes will deliver increased competition and put further downward pressure on vehicle costs, delivering environmental and safety benefits through faster renewal of Australia's vehicle fleet, which is old by global standards.

AAA Position

The AAA urges the Australian Government to pursue measures that increase competition and lower the costs of motoring to reduce to cost impact of a CO2 standard. This includes removing import taxes and implementing amendments to the Motor Vehicle Standards Act to allow Australian consumers to directly import new vehicles from selected markets.

b. Improve consumer information

Australian Design Rules mandate that information on fuel consumption and emission levels be placed on the windscreen of all new cars. However, this information is based on the standard laboratory test often performed overseas and in some cases by the manufacturer, and does not necessarily reflect real world driving conditions.

In addition, the Australian Government's Green Vehicle Guide (GVG) provides consumers with information on CO2 emissions, fuel consumption, fuel costs and the certification level for noxious emissions. Consumers can view the best environmental performers; compare vehicles, estimate fuel costs and CO2 emissions using a fuel calculator. However, this information is based on laboratory testing, and is not a reliable predictor of fuel consumption for vehicle buyers. Real-world testing conducted by ABMARC for the AAA[18] found that the real-world fuel consumption of ten vehicles tested was on average 20 per cent higher than the laboratory results, with the highest measured being 35 per cent greater. This indicates that the variation between laboratory and real-world fuel consumption is not uniform for different vehicle models. The AAA firmly believes that consumers should be provided with fuel consumption information based on real-world testing conducted using Australian vehicles, Australian fuels and in Australian driving conditions.

The AAA believes the GVG should provide clearer guidance to consumers by presenting the information in a way that is easily digestible, like a star rating system similar to energy labelling of electrical appliances and ANCAP vehicle safety ratings. The AAA notes the GVG has previously displayed star ratings and continues to call for this to be restored.

The AAA also believes the GVG should consider including operating cost savings to consumers as included in the US and New Zealand models and leverage the successful labelling system for the energy efficiency of appliances. In addition, the AAA believes the Government consider extending the labelling system to incorporate used cars.

AAA Position

The AAA believes consumers should be offered easily digestible information about a new car's emission levels and fuel consumption, principally by providing information based on real-world testing, re-introducing a star-rating system on the Green Vehicle Guide website and introducing operating cost savings for consumers.

c. Implement real-world testing in Australia

The AAA believes the Australian vehicle regulator must be properly resourced to fulfil its role in enforcing compliance with Australia's mandatory national standards for vehicle safety and emissions.

The AAA is firmly of the view that this must include an ongoing independent audit program to test the vehicle emissions claims of the vehicle manufacturers that are supplying vehicles to the Australian market. The AAA considers it is not sufficient to rely on compliance verification from foreign governments or the car manufacturers.

An ongoing independent audit program would not only provide greater certainty around compliance, but would also provide more accurate environmental information to consumers when purchasing new cars. The current information provided to consumers is derived in a laboratory test that may not represent real world driving conditions, as highlighted by the AAA emissions testing program.

The AAA has recommended Government funding of $250,000 per annum to support an ongoing vehicle emissions audit function using real driving emissions testing protocols.

AAA Position

The AAA strongly supports the establishment of an ongoing independent audit program to test the vehicle fuel efficiency claims of the vehicle manufacturers that are supplying vehicles to the Australian market.

d. Eco-driving initiatives

The AAA supports the view that significant fuel efficiency and cost savings for individual motorists can be achieved through changing driver behaviour, collecting and analysing fuel consumption data, planning more efficient routes, better load management, purchasing vehicles appropriate for their use and properly maintaining vehicles.

Through the AAA's member clubs, various eco-driving initiatives have been trialled and some are currently underway. The RACQ completed a major investigation into eco-driving in 2012, jointly funded by the Queensland Government. It found that average yearly fuel savings of $98 were achieved when an online learning tool was provided to research participants. The report found that the online tool was the cheapest and easiest option to implement on a mass scale. This training had the highest cost-benefit ratio and the report indicated that it could also be easily incorporated into learner driver training[19].

AAA Position

The AAA supports the development of a set of national principles and effective strategies for the implementation and dissemination of eco-driving advice. However, this would need to be adequately funded by relevant state road authorities or incentivised via the Australian Government's Emissions Reduction Fund.

e. Improving transport infrastructure

The efficiency of our transport system has a significant effect on the fuel efficiency of the transport sector. Growing congestion in our cities will erode gains made in car efficiencies. The AAA continues to call on the Government to ensure adequate funding is invested in land transport infrastructure, and pursue initiatives that ensure our current transport system achieves maximum efficiency.

The AAA has long called for the Government to provide a clear link between the taxes motorists pay and expenditure on land transport projects. Motorists make a significant contribution to the Government's revenue base through fuel excise, but only a small portion of this flows back into transport infrastructure expenditure. In line with Australian motorists' expectations, the AAA is strongly of the view that a guaranteed minimum of at least 50 percent of fuel excise revenue, net of fuel tax credits, should be earmarked transparently for land transport infrastructure funding.

In addition, Intelligent Transport Systems (ITS) have the potential to deliver significant safety, environmental and efficiency benefits to the Australian transport system[20]. Investing in effective ITS projects will allow governments to generate large benefits at relatively small cost. For example, the Monash Freeway Motorway Management System, including coordinated ramp metering, increased the road's peak throughput by 30 percent; a $1 million pilot program had an economic payback period of just twelve days[21].

In 2014, RACWA initiated a landmark trial using technology to improve the performance of traffic signals and found that congestion can be considerably decreased without the need for new infrastructure. The findings included average vehicle queue lengths at the four intersections along the corridor were reduced by up to 34 per cent, while journey times were up to 20 per cent faster.

Using technology to test shorter traffic signal cycle times resulted in vehicles getting a green light more frequently, helping traffic to clear faster, and resulting in shorter queues. These signal settings also resulted in up to a 10% increase in the volume of vehicles which could pass through the trial area in the peak direction of travel for typical commuting trips.

AAA Position

The AAA continues to call on the Government to ensure adequate funding is invested in land transport infrastructure by prioritising initiatives that ensure our current transport system achieves maximum environmental, productivity and safety outcomes.

Response to Questions

The AAA supports a regulatory system that provides maximum flexibility for manufacturers to offer a wide range of vehicles and keep costs low. The AAA provides the following high level responses to the questions posed in the draft regulation impact statement, and would welcome the opportunity to provide further comment later in 2017 once additional analysis has been completed.

1. What parameter (CO2 emissions or fuel consumption) should be used for an Australian fuel efficiency standard and why?

The AAA believes fuel consumption would be an appropriate parameter to use for any Australian standard, given fuel savings is the primary personal benefit and is more readily understood by consumers.

2. How should a vehicle's efficiency for the purposes of an Australian fuel efficiency standard be assessed and why?

The AAA supports the assessment of a vehicle's fuel efficiency based on a test procedure that best reflects real world conditions. The Worldwide Harmonised Light Vehicle Test Procedure (WLTP) is expected to close the gap between laboratory and real-world results. However, the introduction of WLTP does not change the fact that it is not a real world driving test and that it will still be performed overseas and in some cases by the manufacturer. In addition to the official test, the AAA strongly believes the Government should support a separate, independent real driving emissions test program in Australia under Australian conditions to ensure compliance and provide more information to consumers about what fuel efficiency they can expect on the road.

3. How should a sales-weighted average target be applied in Australia and why?

The AAA believes an attribute based fleet average standard would ensure more vehicle choice than a flat standard for the fleet. An attribute based fleet average allows manufacturers to offer larger cars, so long as it is countered with a range of smaller cars, whereas a flat standard places an absolute limit on what can be offered.

4. If an attribute based standard is adopted, which attribute should be adopted in Australia and why?

The AAA believes either a vehicle weight attribute or a vehicle size attribute would be appropriate for Australian conditions. The US employ a vehicle size attribute and given Australia's fleet is more comparable to the US than Europe (which use a vehicle weight attribute), a vehicle size attribute may be appropriate.

5. How should a fuel efficiency standard be applied to each light vehicle category and why?

6. If SUVs are subject to a different target to passenger cars, how should SUVs be defined, and why?

The AAA believes a CO2 standard should not penalise manufacturers that produce larger cars or predominantly light commercial vehicles. Therefore, a separate standard for passenger cars and light commercial vehicles would seem appropriate.

The AAA is open to SUVs being subject to a different target to passenger cars if it is seen to provide additional flexibility to manufacturers.

7. How should targets for a fuel efficiency standard be phased in and why?

8. If annual targets are adopted, what targets should apply in each year for each segment and why?

9. If a percentage phase in is adopted, what percentage should apply in each year and each segment, and why?

The AAA supports a phase in period that maximises flexibility for manufacturers to meet their targets. The US uses annual targets, which are updated each year based on the projected sales for that year. This system appears to provide for more flexibility than a percentage style phase in period.

10. What flexibility arrangements should be allowed under an Australian fuel efficiency standard and why?

The AAA believes any CO2 standard should offer manufacturers the opportunity to engage in pooling and banking arrangements. These flexibility arrangements are available in other jurisdictions, including the US and Europe and should be available to manufacturers selling cars in Australia.

11. What, if any, credits should an Australian fuel efficiency standard adopt to further encourage the supply of more efficient vehicles, and why?

The AAA believes any CO2 standard should offer manufacturers the opportunity to apply for credits. Credits are available in other jurisdictions, including the US and Europe and should be available to manufacturers selling cars in Australia.

12. Which entities should be required to comply with a fuel efficiency standard, and why?

The AAA believes the entity responsible to comply with a CO2 standard should be the same entity that is responsible for meeting other Australian Design Rules.

13. What concessional arrangements should be offered to low volume suppliers under an Australian fuel efficiency standard and why?

The AAA supports a threshold that ensures low volume suppliers are exempt from a CO2 standard but does not open potential loopholes to avoid compliance. It would appear appropriate to set a threshold that covers around 90 per cent of the fleet, which is consistent with international practice.

14. What penalties should be applied to entities that failed to comply with a fuel efficiency standard and why?

The AAA believes that the design of a penalty system must provide sufficient incentive to vehicle brands to comply with a CO2 standard, whilst allowing the market to offer consumers a choice of vehicles and minimising cost to consumers.

Conclusion

The AAA supports a CO2 standard for light vehicles which is appropriate for Australian conditions and maintains choice and affordability in the market. However, the AAA believes there are several omissions in the regulatory impact statement that limit our ability to fully analyse the three proposed targets. These need to be clarified and the Government must release a preferred approach for consultation.

The AAA also believes the Government must offset the cost impact of a CO2 standard by pursuing measures to increase competition and lower the costs of motoring, and implement an ongoing independent audit program to test the vehicle fuel efficiency claims of the vehicle manufacturers.

Next steps in the regulation process

The Ministerial Forum on Vehicle Emissions is considering the introduction of CO2 emission standards for light vehicles, along with Euro 6 standards for noxious emissions, and changes to fuel quality standards.

The AAA believes these issues cannot be each considered in isolation as they are interrelated. Changes to fuel quality, with potential consequent impact on fuel prices, will impact the costs associated with CO2 and Euro 6 standards. The introduction of a CO2 standard in isolation may result in undesirable outcomes such as low fuel consumption technologies with increased noxious emissions (for example, from greater numbers of diesel or petrol direct injection vehicles) which may then necessitate consideration of Euro 6 standards to mitigate the health consequences. The introduction of Euro 6 is expected to necessitate the use of low sulfur fuels, prompting consideration of fuel quality standards.

The AAA believes it is not appropriate to consider CO2 and/or Euro 6 standards ahead of consideration of fuel quality standards, as the timeline for introduction of these will depend on the widespread availability of suitable fuels.

As the issues are inextricably related, they need to be considered as a single package of measures, with a single benefit-cost analysis for the package. The AAA calls on the Government to present a proposed package of regulatory measures, with a single cost-benefit calculation for the package, incorporating all costs and benefits.

The AAA notes that, during the Ministerial Forum stakeholder consultation session on Wednesday 15 February 2017, the Deputy Secretary of the Department of Infrastructure and Regional Development foreshadowed a further round of consultation on the regulation impact statements in July/August 2017.

The AAA strongly supports additional consultation. As outlined in this submission, the AAA believes the current analysis for introduction of a CO2 standard, Euro 6 regulations and new fuel quality standards requires further work. The AAA considers that the documents released by the Ministerial Forum on 20 December 2016 do not adequately address the issues required by The Australian Government Guide to Regulation.

The AAA would be pleased to provide comment when the regulation impact statements have been further developed, and recommends that the revised documents address the following matters:

- **The independent analysis of all three proposals.** The three issues considered by the Ministerial Forum (CO2 standards, Euro 6 standards, and fuel quality standards) are interrelated such that it is not accurate to analyse each of them with separate individual cost-benefit analyses. A final regulation impact statement for public comment should present a proposed package of regulatory measures, with a single cost-benefit calculation for the package, incorporating all costs and benefits. Any assumptions used in this modelling would need to be reviewed and confirmed before undertaking this work.

- **Consideration of new fuel quality standards is complete and the Government presents a preferred approach.** Consideration of CO2 standards and Euro 6 cannot be concluded without conclusion of considerations on the issues regarding quality, price and availability of suitable fuels.

- **The preferred design of a proposed CO2 standard (including the applicability to vehicle categories, details of the limit curve, and the method by which the fleetwide CO2 emissions are calculated).** This has not been detailed in the draft regulation impact statement. For example, in Europe, each vehicle emitting less than 50gCO2/km may be counted as more than one vehicle when determining the sales-weighted average; and eco-innovations such as LED lighting that do not provide a benefit in the standard laboratory test may also be given CO2 credit. The analysed CO2 targets in the draft regulatory impact statement are unable to be assessed without this detail. Appendix A of the RIS poses a series of questions regarding these details which are designed to elicit responses in stakeholder submissions to help resolve these details. An updated regulation impact statement for stakeholder comment should specify all required details.

- **The divergence between real-world and laboratory results for fuel efficiency and emissions.** The draft CO2 regulation impact statement assumes that real-world fuel consumption (and hence CO2 emissions) are 5%-10% higher than those measured in the laboratory test. Sources such as the ICCT[22], and the results of a small sample of vehicles tested by the AAA, suggest that the variation may be significantly greater. This needs to be taken into consideration when estimating costs and benefits, particularly consumer fuel savings.

- **The consumer fuel savings as a result of a CO2 standard (detailed in Appendix C of the draft regulation impact statement).** The fuel savings are not based on a comparison of BAU fuel pricing with a predicted fuel price arising as a consequence of the introduction of a package of measures considered by the Ministerial Forum. This needs to be included in the analysis to fully understand the implications for consumers.

- **Utility costs**. The draft CO2 regulation impact statement does not present a detailed consideration of "other costs" including loss of vehicle attributes valued by consumers. As the introduction of regulation is intended to intervene in the market, it is important to understand these effects. The draft regulation impact statement states that, due to a lack of information and/or a methodology to reliably estimate these effects, these costs have been excluded. However, the sensitivity analysis indicates that consideration of the loss of utility for consumers can have the largest impact of all of the sensitivity tests, reducing the Benefit-Cost Ratio from 1.86 to 1.24. This requires further work.

- **The impact of potential changes to fuel quality standards for the existing vehicle fleet.** The Government must be able to demonstrate the costs and benefits of any changes to fuel quality standards for the existing fleet.

- **Sensitivity analysis.** The regulation impact statement conducts a sensitivity analysis of various parameters, but analyses each parameter individually, and does not consider the possibility that two or more of the modelled values may be incorrect at the same time.

- **The costs and benefits to regional Australia.** Air quality benefits associated with Euro 6 will be realised by residents of Australia's most densely populated cities, however any corresponding increase in fuel costs is likely to significantly impact those who drive the furthest distances, such those in regional Australia.

Conclusion

The AAA believes that stakeholders need to be provided an opportunity to comment on a combined cost-benefit analysis which brings together all three regulatory proposals - CO2, noxious emissions and fuel quality. This would allow for detailed consideration of the inter-related impacts and ensure all costs and benefits are considered.

The AAA sees this to be consistent with the comments made by the Deputy Secretary of the Department of Infrastructure and Regional Development on 15 February when responding to concerns raised at the Ministerial Forum consultation session about the difficulties stakeholders were experiencing in considering Euro 6 and CO2 standards in the absence of detail on changes to fuel quality. A combined cost-benefit analysis will ensure that all impacts are considered, including flow-on impacts to existing vehicle owners, and what it may mean for specific communities, such as regional Australia.

Footnotes

[1] ABS Household Expenditure Survey, 2009-10 – the proportion of goods and services expenditure spent on 'domestic fuel and power' is 2.6 per cent. Domestic fuel and power includes expenditure on electricity, mains gas, bottled gas, heating oil and wood.

[2] Australian Government, Department of Environment and Energy: Australian Petroleum Statistics, January 2017.

[3] The price differentials between 91 RON and 95 RON are based on average capital city prices sourced from motormouth.com.au on 9 March 2017.

[4] The price differentials between 91 RON and 95 RON are based on average capital city prices sourced from motormouth.com.au on 9 March 2017.

[5] International Council on Clean Transportation, White Paper: Real-world exhaust emissions from modern diesel car, Part 2: detailed results, 2014, p.ii.

[6] National Transport Commission, Carbon dioxide emissions intensity for new Australian light vehicles 2015.

[7] Department of Environment and Energy, Submission to the Joint Standing Committee's inquiry into the ratification of the Paris Agreement and the Doha Amendment to the Kyoto Protocol, Attachment A.

[8] Environmental Protection Agency and Department of Transportation Joint Final Rule, October 2012.

[9] Regulation (EC) No 443/2009 of the European Parliament and of the Council, Article 13, April 2009.

[10] ABMARC, Analysis of the Australian 2015 new light vehicle fleet and review of technology to improve light vehicle efficiency, 2016, p.7.

[11] VFACTS National Report - new vehicle sales by buyer type and fuel type -December 2014, 2015, 2016.

[12] The Centre for International Economics, Reducing greenhouse gas emissions from light vehicles, p.27.

[13] International Council on Clean Transportation, From Laboratory to Road: A 2015 update of official and 'real world' fuel consumption and CO2 values for passenger cars in Europe, pp. ii-iii.

[14] Australian Government, Draft Regulation Impact Statement, Improving the efficiency of new light vehicles, December 2016, p. 96.

[15] Australian Government, Draft Regulation Impact Statement, Vehicle emissions standards for cleaner air, December 2016, p. 49.

[16] The Centre for International Economics, Reducing greenhouse gas emissions from light vehicles, 2016.

[17] 2016-17 Mid-Year Economic and Fiscal Outlook.

[18] ABMARC, Real World Driving, Fuel Efficiency & Emissions Testing, Preliminary Report November 2016.

[19] RACQ EcoDrive Research Study - Final Report 2012.

[20] SCOTI 2012, Policy Framework for Intelligent Transport Systems in Australia, Canberra, March 2012.

[21] Gaffney, J. 2010, Monash – CityLink – West Gate Upgrade Project, presentation to the 24th ARRB Conference, 12–15 October.

[22] International Council on Clean Transportation report: Real-world fuel consumption of popular European passenger car models, 2015.

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